

What is claimed is:

1. A method of manufacturing rear plate barrier ribs for a Plasma Display Panel (PDP) comprising the steps of:

5 forming a thick film for barrier ribs by coating barrier rib forming paste, which has a wetting angle to a mold less than 90° and a viscosity in usage state less than 20000cP and includes thermosetting and/or photosensitive binder component, on a glass or metal substrate (or, glass or metal lower plate);

10 positioning a mold, in which a barrier rib shape is imprinted, above the thick film so that the paste is infiltrated into grooves of the mold by means of the capillary phenomenon, and then curing the infiltrated paste; and

releasing the mold from the cured barrier ribs and then sintering the barrier ribs.

2. A method of manufacturing rear plate barrier ribs for PDP according to claim 1,
15 wherein the viscosity of the paste in usage state is less than 15000cP.

3. A method of manufacturing rear plate barrier ribs for PDP according to claim 1, wherein the method executes one or at least two of the following ways: (i) using binder component having a low viscosity; (ii) adding a diluting agent having a low viscosity into the paste; (iii)
20 increasing the temperature of the paste in usage state; and (iv) lowering the content of inorganic powder including glass powder and ceramic powder, so that the viscosity of the paste in usage state is lowered.

4. A method of manufacturing rear plate barrier ribs for PDP according to claim 3,
25 wherein the temperature in usage state of the way (iii) is ranged between 50°C and 70°C.

5. A method of manufacturing rear plate barrier ribs for PDP according to claim 1, wherein the capillary molding of the paste is conducted under the vacuum circumstance of 600 torr

~ 10⁻⁶ torr.

6. A method of manufacturing rear plate barrier ribs for PDP according to claim 5, wherein the vacuum circumstance is 600 torr ~ 10 torr.

5

7. A method of manufacturing rear plate barrier ribs for PDP according to claim 1, wherein, during the capillary molding of the paste, the mold is bent so that a center portion of the mold temporarily forms a smooth curve protruded downward, and the molding is conducted while the bent mold is slowly spread.

10

8. A method of manufacturing rear plate barrier ribs for PDP according to claim 1, wherein the method comprises the steps of:

(1) making the paste having a wetting angle to a mold less than 90° and a viscosity in usage state less than 20000cP by mixing glass powder and ceramic powder so that a mixing ratio is in the range between 50:50 and 95:5, and then mixing 2 to 20wt% of thermosetting and/or photosensitive binder, 0.1 to 10wt% of thermosetting and/or photosensitive initiator, 0.01 to 10wt% of surfactant (dispersion agent, defoaming agent or wetting agent) and 0.01 to 5wt% of coupling agent on the basis of 100wt% of the mixed powder;

(2) making a thick film by coating the paste on the glass or metal rear plate in the thickness of 5 to 100μm;

(3) forming barrier ribs by positioning the mold, in which a barrier rib shape is imprinted, on the paste so that the paste is infiltrated into the grooves of the mold by means of the capillary phenomenon;

(4) curing the substrate and the paste filled in the grooves of the mold by heating or UV radiation, and then releasing the mold; and

(5) sintering the specimen at 450°C to 600°C for 0.5 to 1 hour.

9. Paste compositions used in the barrier rib manufacturing method defined in any of

the claims 1 to 8, comprising:

(a) 100wt% of mixed powder of glass powder (a-1) and ceramic powder (a-2) of which a volume ratio is in the range of 50:50 to 95:5;

(b) 2 to 20wt% of thermosetting and/or photosensitive binder;

5 (c) 0.1 to 10wt% of curing initiator;

(d) 0.01 to 10wt% of surfactant (dispersion agent, deforming agent or wetting agent); and

(e) 0.01 to 5wt% of coupling agent,

wherein the paste compositions have a wetting angle to a mold less than 90° and a viscosity in usage state less than 20000cP.

10

10. Paste compositions according to claim 9, further comprising

(f) 20 to 40wt% of reactive diluting agent.

11. A Plasma Display Panel (PDP) using the barrier ribs manufactured according to the

15 method defined in the claim 1.